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Alan D. Kirsch  
Bechtel BWXT Idaho, LLC  
P. O. Box 1625  
Idaho Falls, ID 83415-3899

EXAMINER

KRECK, JOHN J

ART UNIT

PAPER NUMBER

3673

DATE MAILED: 04/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/991,331

Applicant(s)

LEE ET AL.

Examiner

John Kreck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 29-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 and 41-58 is/are rejected.
- 7) ☒ Claim(s) 59 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-28 and 41-59, drawn to a well (claims 41-59) and method of inhibiting microbial growth in a well (claims 1-28), classified in class 166, subclass 279.
- II. Claims 29-40, drawn to a microbial growth inhibiting material (34-40) and method of making (claims 29-33), classified in class 424, subclass 405.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II (material) and I (method) are related as product and process of use.

The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used to filter water in a treatment plant.

Inventions I and II are also related as combination and subcombination.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because it does not

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require the chlorine, amine or metal. The subcombination has separate utility such as to filter water in a treatment plant.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Alan Kirsch on 3/18/03 a provisional election was made without traverse to prosecute the invention of group I, claims 1-28 and 41-59. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the slotted tube (claim 59) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

5. Claim 5 is objected to because of the following informalities: in line 2, please change "omprises" to "comprises". Appropriate correction is required.

Claim 53 is objected to because of the following informalities: in line 1, please change "extend" to "extends". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 lacks antecedent basis for "the annular space" and "the casing". Claim 5 has been examined as if it depends from claim 4.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 9, 11, 14, 18-21, 24-27, 44-47, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Roser (U.S. Patent number 5,099,917).

Roser teaches a method of inhibiting microbial growth in a well including the steps of providing a well bore; providing an access tube (30); and supplying an antimicrobial material (see col. 5, lines 58-66) as called for in claim 9.

Roser also teaches the casing (10) as called for in claim 11.

Roser also teaches the perforated segment (35) and second terminal opening capped (23) as called for in claim 14.

Roser also teaches the chlorine release compound as called for in claim 18.

Roser also teaches the chlorine compound which releases chlorine when the compound reacts with water as called for in claim 19.

Roser also teaches the tablet or pellet form (col. 5, line 63) as called for in claim 20.

Roser also teaches the encapsulated form as called for in claim 21.

Roser also teaches the well extends into the saturated zone (the water level 32 corresponds to the saturated zone) as called for in claim 24.

The Roser well also extends into the vadose zone as called for in claim 25

Roser also teaches the packing material (16) as called for in claim 26.

Roser also teaches the packing material above the perforated segment as called for in claim 27.

Regarding independent claim 44:

Roser shows a well bore; access tube (30); and microbial agent added through the tube as called for in claim 44.

Roser also teaches the casing (10) as called for in claim 45.

Roser also teaches the tablet or pellet as called for in claim 47.

Roser also teaches the well extends into the saturated zone as called for in claim 52.

Roser also teaches the well extends into the vadose zone as called for in claim 53.

8. Claims 1, 3, 4, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Means (U.S. Patent number 3,489,218).

Means teaches the method of inhibiting microbial growth including the steps of providing a well bore; mixing a first material and an antimicrobial agent to form a packing material (see col. 3 lines 4-16) and filling at least a portion of the wellbore as called for in claim 1.

Means also teaches the sand (this is an inherent component of well cement) as called for in claim 3.

Means also teaches the casing and annular space as called for in claim 3.

Means also teaches the well extends into the saturated zone (this is inherent--- the the water level from which water is pumped corresponds to the saturated zone) as called for in claim 7.

The Means well also extends into the vadose zone as called for in claim 8

9. Claims 1, 3, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by McDougall, et al. (U.S. Patent number 4,670,166).

McDougall teaches the method of inhibiting microbial growth including the steps of providing a well bore; mixing a first material and an antimicrobial agent to form a packing material (see col. 5, lines 40-47) and filling at least a portion of the wellbore as called for in claim 1.

McDougall also teaches the sand (see col. 8, lines 13-16) as called for in claim 3.

McDougall also teaches the casing and annular space (see col. 9, lines 5-16) as called for in claim 4.

McDougall also teaches the screened portion (see col. 9, lines 5-16) as called for in claim 5.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 15, 17 and 48 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being unpatentable over Roser.



Roser fails to explicitly disclose the time intervals as called for in claim 15; or the size of the access tube as called for in claim 48.

Roser teaches that a treatment has a finite duration (col. 5, line 65). It is apparent that the Roser process encompasses supplying the agent at time intervals, in order to keep the well free of bacteria for a longer period, alternatively it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included supplying the antimicrobial agent at time intervals as called for in claim 15, since the treatment only lasts for a fixed period.

Roser also teaches the reversibly capping (31) as called for in claim 17.

Roser teaches that the antimicrobial agent may have a diameter of 3/8 inches (col. 5, line 62); which falls within the range of 0.25 inches to about 1.5 inches. It is apparent that since the sole purpose of the tube in the Roser well is to allow the antimicrobial agent to be introduced into the well; the diameter of the tube would also fall within this range; alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser well so that the tube would have a diameter within the range of 0.25 inches to about 1.5 inches as called for in claim 48, in order to allow the agent to be introduced in the well.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roser. Roser fails to explicitly disclose the time intervals as called for in claim 16. Roser teaches that the agent may be effective for more than a year. It is well known in engineering practice to replace a component before it is expected to fail, in order to

prevent problems due to the failure. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included supplying the agent at intervals from between about 2 months to about 12 months as called for in claim 16; in order to prevent bacterial build-up.

12. Claims 10, 12, 13, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roser in view of Howard (U.S. Patent number 3,202,213).

Roser discloses only a single access tube.

Howard teaches that a number of access points equally spaced around the exterior of a casing are advantageous over a single access, in order to ensure even distribution around the casing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included about 2 to about 10 access tubes as called for in claim 10, in order to ensure even distribution around the casing, as taught by Howard.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included distribution about 2 to about 10 access tubes around the circumference of the casing as called for in claim 12, in order to ensure even distribution around the casing, as taught by Howard.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included equally spacing the

access tubes as called for in claim 13, in order to ensure even distribution around the casing, as taught by Howard.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser well to have included equally spacing the access tubes as called for in claim 49, in order to ensure even distribution around the casing, as taught by Howard.

13. Claims 22 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roser in view of Morine (U.S. Patent number 3,547,194).

Roser fails to explicitly disclose the pumping gas or liquid antimicrobial agent. Roser teaches a chlorine agent.

Morine teaches pumping a liquid agent (copper sulfate-col. 1, lines 36-40) which is disclosed as being more effective than chlorine.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included pumping a liquid agent as called for in claim 22, because it is more effective than chlorine, as taught by Morine.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser well to have included a liquid agent as called for in claim 46 because it is more effective than chlorine, as taught by Morine.

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14. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roser in view of Morine (U.S. Patent number 3,547,194) and Crow (U.S. Patent number 3,566,970).

Roser fails to explicitly disclose the pushing gas or liquid antimicrobial agent.

Roser teaches a chlorine agent.

Morine teaches pumping a liquid agent (copper sulfate-col. 1, lines 36-40) which is disclosed as being more effective than chlorine.

Crow teaches that pushing liquids into a well with pressurized gas is advantageous over pumping because it allows for variations in pressure. Crow fails to teach what gas is used; but it is notoriously conventional to use compressed air, because air is free.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included introducing a liquid agent, because it is more effective than chlorine, as taught by Morine; and to have introduced the liquid by pushing with pressurized gas, as taught by Crow, and to have the pressurized gas be air as called for in claim 23.

15. Claims 28, 50, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roser in view of Means.

Roser fails to teach the forming the packing material including mixing sand or gravel with antimicrobial material.

Means teaches that mixing well cement (which inherently includes sand or gravel) with antimicrobial material prevents growth of bacteria in the well casing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included the forming the packing material including mixing sand or gravel with antimicrobial material as called for in claim 28, in order to prevent growth of bacteria in the well casing as taught by Means.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser well to have included the packing material with a second antimicrobial material as called for in claim 50, in order to prevent growth of bacteria in the well casing as taught by Means.

Means teaches a different antimicrobial agent (radioisotopes); it is apparent that the radioisotopes are effective at treating fluid flowing through a casing. It would have been further obvious to one of ordinary skill in the art at the time of the invention to have used a different antimicrobial material as called for in claim 51, in order to prevent growth of bacteria in the well casing as taught by Means.

16. Claims 2 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Means.

Means teaches all of the limitations of claim 1, but fails to teach the concentration of antimicrobial agent. It is well known in the art that the concentration of an antimicrobial compound is a matter of engineering design, based on factors such as expected microbes; ambient conditions; and cost. It would have been obvious to one of

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ordinary skill in the art at the time of the invention to have practiced the Means invention with antimicrobial agent from about 0.5% to 30% by volume, as called for in claim 2; based on expected microbes; ambient conditions; or cost.

Regarding independent claim 41:

Means teaches the well bore and backing material including sand and an antimicrobial agent, but fails to teach the concentration of antimicrobial agent. It is well known in the art that the concentration of an antimicrobial compound is a matter of engineering design, based on factors such as expected microbes; ambient conditions; and cost. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the Means invention with antimicrobial agent from about 0.5% to 30% by volume, as called for in claim 41; based on expected microbes; ambient conditions; or cost.

17. Claims 2 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDougall.

McDougall teaches all of the limitations of claim 1, but fails to teach the concentration of antimicrobial agent. It is well known in the art that the concentration of an antimicrobial compound is a matter of engineering design, based on factors such as expected microbes; ambient conditions; and cost. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the McDougall

invention with antimicrobial agent from about 0.5% to 30% by volume, as called for in claim 2; based on expected microbes; ambient conditions; or cost.

Regarding independent claim 41:

McDougall teaches the well bore and backing material including sand and an antimicrobial agent, but fails to teach the concentration of antimicrobial agent. It is well known in the art that the concentration of an antimicrobial compound is a matter of engineering design, based on factors such as expected microbes; ambient conditions; and cost. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the McDougall invention with antimicrobial agent from about 0.5% to 30% by volume, as called for in claim 41; based on expected microbes; ambient conditions; or cost.

McDougall also teaches the casing, screened portion and annular space as called for in claim 42.

McDougall fails to explicitly disclose the material completely covering the screen; however McDougall teaches that the screen holds the material in place (col. 9, line 10); which suggests that the screen and the amount of material is substantially the same. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the McDougall invention with the material completely covering the screen as called for in claim 43.

18. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Means in view of Roser.

Means teaches all of the limitations of claim 1, but fails to teach the filler material. Roser teaches a filler material (22) in order to prevent debris from entering the well. It would have been obvious to one of ordinary skill in the art at the time of the invention to have practiced the Means invention with the step of filling a portion of the wellbore with a filler material after placing the packing material as called for in claim 6, in order to prevent debris from entering the well.

19. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roser in view of Howard and Means.

Roser teaches the well bore, casing (10) with a terminal end and screened portion (12) extending to a first elevation; a single access tube having first and second terminal openings with a perforated segment (35) extending to a second elevation; a layer of packing material (22) which fills the bore to a third elevation; and a [second] microbial material within the access tubes. Roser fails to teach the multiple access tubes encircling the casing; and the packing layer incorporating a first antimicrobial material.

Howard teaches that a number of access points equally spaced around the exterior of a casing are advantageous over a single access, in order to ensure even distribution around the casing.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser well to have included multiple access tubes



equally spaced around the casing, in order to ensure even distribution around the casing, as taught by Howard.

Means teaches a packing material including sand or gravel with antimicrobial material prevents growth of bacteria in the well casing.

It would have been further obvious to one of ordinary skill in the art at the time of the invention to have modified the Roser process to have included the packing material with sand or gravel with antimicrobial material as called for in claim 54, in order to prevent growth of bacteria in the well casing as taught by Means.

Roser teaches the third elevation greater than the first as called for in claim 55.

20. Claims 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roser, Howard, and Means as applied to claim 54 above, and further in view of Morine.

Roser fails to explicitly disclose the pumping gas or liquid antimicrobial agent. Roser teaches a chlorine agent.

Morine teaches pumping a liquid agent (copper sulfate-col. 1, lines 36-40) which is disclosed as being more effective than chlorine.

It would have been further obvious to one of ordinary skill in the art at the time of the invention to have further modified the Roser well to have included a liquid agent as called for in claim 56 because it is more effective than chlorine, as taught by Morine.

It would have been further obvious to one of ordinary skill in the art at the time of the invention to have further modified the Roser well to have included a liquid agent

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pumped as called for in claim 57 because it is more effective than chlorine, as taught by Morine.

21. Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roser, Howard, Means and Morine as applied to claim 56 above, and further in view of Crow.

Crow teaches that pushing liquids into a well with pressurized gas is advantageous over pumping because it allows for variations in pressure. Crow fails to teach what gas is used; but it is notoriously conventional to use compressed air, because air is free.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have further modified the Roser process to have introduced the liquid by pushing with pressurized gas, in order to allow for variations in well pressure as taught by Crow, and to have the pressurized gas be air as called for in claim 58.

***Allowable Subject Matter***

22. Claim 59 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kreck whose telephone number is (703)308-2725. The examiner can normally be reached on M-F 6:00 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Shackelford can be reached on (703)308-2978. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703)305-3597 for regular communications and (703)305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-4177.

A handwritten signature in black ink, appearing to be 'John Kreck', written over a horizontal line.

John Kreck  
Examiner  
Art Unit 3673

JJK  
March 28, 2003